

United States Patent

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Method for manufacturing group III nitride compound semiconductor and a light-emitting device using group III nitride compound semiconductor

**Abstract**

A buffer layer 2 made of aluminum nitride (AlN) is formed on a substrate 1 and is formed into an island pattern such as a dot pattern, a striped pattern, or a grid pattern such that substrate-exposed portions are formed in a scattered manner. A group III nitride compound semiconductor 3 grows epitaxially on the buffer layer 2 in a longitudinal direction, and grows epitaxially on the substrate-exposed portions in a lateral direction. As a result, a group III nitride compound semiconductor 3 which has little or no feedthrough dislocations 4 is obtained. Because the region where the group III nitride compound semiconductor 3 grows epitaxially in a lateral direction, on region 32, has excellent crystallinity, forming a group III nitride compound semiconductor device on the upper surface of the region results in improved device characteristics.

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257/E21.113; 257/E21.125

Intern'l Class:

C30B 025/04

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117/88,94,95,96,89,952

**References Cited [Referenced By]****U.S. Patent Documents**

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**Claims**